

# Building an AK

<http://www.acearms.com>

## The Front Trunion

Since these Ace Arms blanks are a brand new item, I thought I would document the steps necessary to complete a build using one of them.

I start with the front trunnion and work my way back.

Step one is to fit the front trunnion.

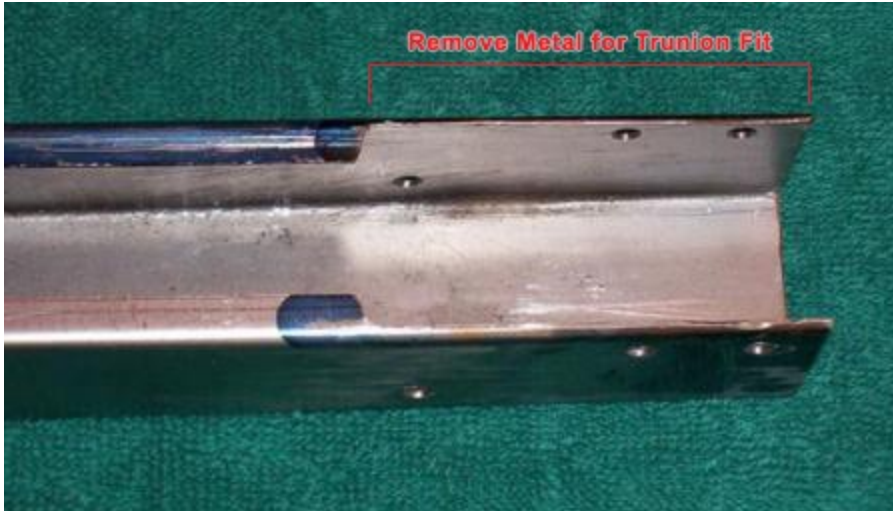
All the measurements I use should be checked against your own kit as they may vary.

First, remove approx 1-1/4" from the front of the blank.



**Editor's Note:** This can be done with a variety of cutting tools, including a dremel cutoff disc, hacksaw and/or chop saw. Always remember to square off the top of the blank for your cut.

Next, remove almost the entire top rail for the first 2-5/8" leaving just enough of the bend to engage the "slots" in the trunnion.



Always remember make all cuts long and file to fit.



Locate and drill mounting holes for front trunnion. Start undersized to check the location, finish with a #21 drill bit.



**Editor's Note:** *The above step is easier done with the trunion separate from the barrel. This step can also be done with your trunion attached to your barrel, but be sure to measure a few times to be sure of the hole location. Alternatively, this step can be done last. If you choose to do the trunion holes last, you may use c-clamps to hold your front and rear trunions in place.*

I use #8 machine screws to temporarily hold every thing together while building, they fit perfectly. Also notice how the upper bends in the receiver blank lock into the groove in the trunion, to orientate it while the sides lay flush against the trunion.



The front trunnion is finished!





## The Magazine Well

Use your foregrip to locate the front trunnion. The wooden "snout" (part of the lower hand guard that protrudes into the receiver) should fit nicely between the trunnion and the receiver.

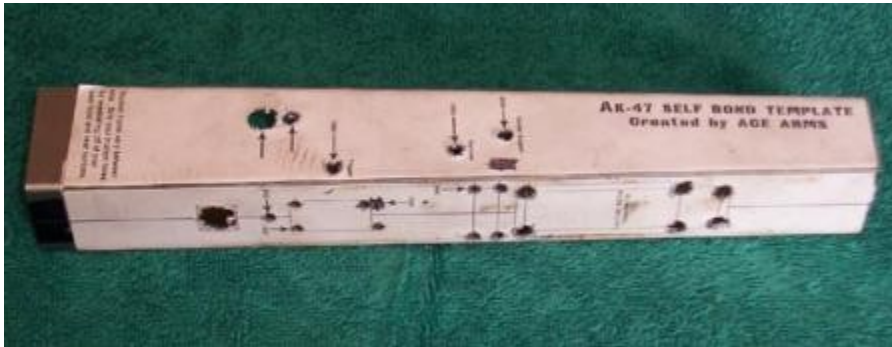


This build is going much faster and more precisely than either of my others and the reason is clear, the template. I have never found one that was 100% correct before. I must have a half a dozen of them, and no two are identical so I would measure from all of them and used the measurements that seemed right, which was a very time consuming task.

After double checking as best I could, I decided that the template was correct. I just glued that sucker on, and fired up the drill press.



Here it is all drilled.



**Editor's Note:** While using a drill press helps a great deal, if you don't have one, don't worry. A hand drill can be used instead. Be sure to center punch all your spots prior to drilling and we highly recommend that you step drill (start with the smallest drill bit you have and work your way up to size).

The template alone is worth what they are asking for their bent blanks and they give it to you free when you buy one.

Magwell is perfect.





Not bad for about 3 hours of work, the old way took me at least twice that long to get to this stage.





## The Top Rails

I finished up the bottom by cutting out the trigger opening and the pistol grip hole.



Normally at this point I would move on to fitting stock tang (rear trunion) and cutting to finished the overall length. Since I don't have my stock tang yet, I'm moving on to the upper rails.



I devised a piece to make this very easy. I took a piece of 1-1/2 x .250 stock and had a friend cut a .100 step in it.





By clamping this to the receiver to use like a rip fence, it allows me to make this cut quickly and accurately, saving a bunch of filing.





The rails after clean-up should be around .190. The final fit will come after the trunnion, stock tang and center support are in place.



Bolt carrier should still be snug at this point.





The rails should fully engage the slots in the bolt carrier. The trunions and center support will pull the sides in when installed, and final light filing will probably be required at that point.



The top rails are done!



## The Lower Rails

To locate the lower rails, I use a letter "C" drill bit. Lay it right under the upper rail, then your lower rail will be parallel and properly spaced.

Here is the right side rail clamped in position.



With the rail clamped in place, you can drill the holes where the center support and the hammer axis pin pass through the rail.



After drilling the holes, I temporarily secure the rail with two #10 machine screws.

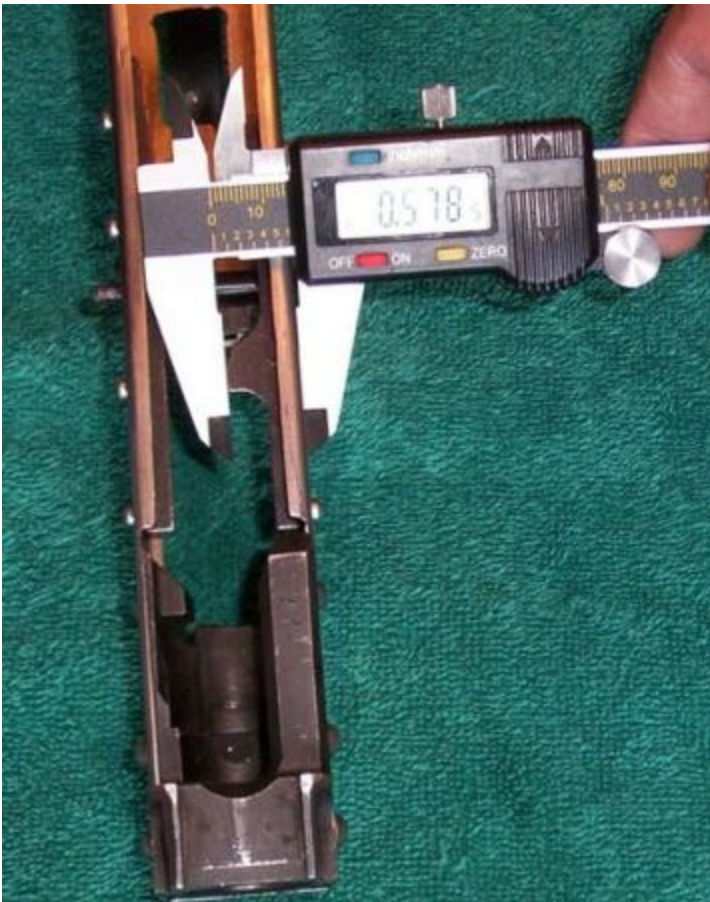


Left side clamped.



Since the rails sold by Ace Arms are made to also work in an AK-74, they must be trimmed to fit an AK-47.

Before trimming:



After trimming:





Keep checking your fit with the bolt while trimming.



When you install the center support, it will pull the sides (receiver walls) in a little. I took a center support and tapped both ends for 10-32 threads. That way I can fit everything, and still remove the support during the build.

Use the bolt to check the rail alignment with the trunnion.



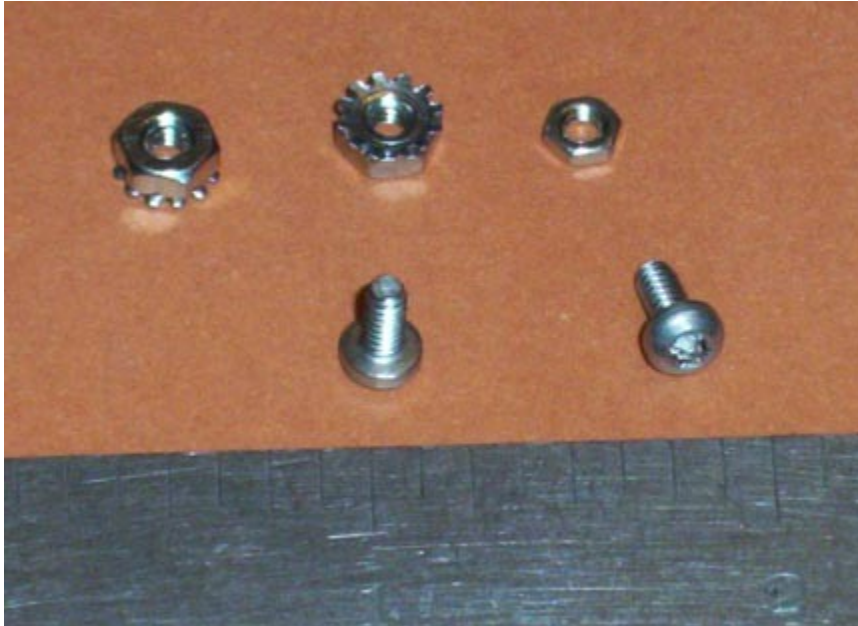
Put the bolt in the carrier and make sure it slides freely through the ejector and into the trunnion.





## Attaching the Lower Rails

On my first two blank builds, I bolted the rails in using 4-40 nuts and bolts. There are two different nut sizes in 4-40, a 1/4" x 1/8" with attached lock washer and a 3/16" x 1/16".



I originally purchased the former for strength, but soon realized that they would not work in the first two holes because of interference with the magazine. I ended up using two of each, in each rail. This pic was taken, before the bolts were ground down for mag clearance.



If you are happy with your rail location, measure down .500 from the top rail and scribe a line, that should put you right smack in the center of the lower rail and mark out your 4 hole locations for bolting your lower rails. If you're going to use bolts, drill through with the rails clamped in place. If you're welding, take the rails out before drilling.

Here's a sample photo. I bolted rails on my prior AMD-65 build. You can also see the head of the bolt in my center support.



I'm going to have this one rosette welded, but I must find out from my welder what size holes, he wants.



Later we will have to file fit the lower lip on the rails for mag clearance.





## The Rear Trunion/Tang

Time to fit the stock tang (aka rear trunion).

Reduce the top rails to approximately .130 in width, so you can slide tang on.



The rails should fit into the grooves of the tang, yet the sides of the receiver wall must lay flat against the sides of the tang, as we did in the front trunion.



The rear can now be notched for the top cover.



**Fitting the Top Cover**

Use the top cover to determine tang location.



**Editor's Note:** Using your top cover is the best way to determine the overall length of your receiver blank. Make sure your front and rear trunions are secured (using c-clamps) and then check the top cover for fit. File to fit until you have the desired tight fit, and that's your receiver's overall length.

Once the tang location is set, the OAL can be trimmed to size.



After trimming:





A section of the upper rail must be almost entirely removed, starting at the front of the rear tang and extending forward .900.



This slot is for the bolt carrier to drop into.



## **The Center Support**

I made my center support out of the shank portion of a 5/16" bolt, rifle drilled it and then tapped both ends to 10-32.

The area of the top rail marked by black magic marker must be trimmed slightly to allow the bolt to clear it upon assembly



The lower lip of the lower rails must be trimmed to clear the mags.



Use the bolt to verify rail to trunnion alignment.





Rails should be perfectly aligned with the trunnion and the mag should slide in easily yet be supported firmly.



The fabrication of the receiver is essentially completed.



### The Muzzlebrake and Headspace

I silver soldered the brake using Brownell's silver solder paste and a Mapp/Oxy torch.



I checked the headspace with the go and no-go gauges. It was right on the money but make sure you check this anyway. I also cycled it some action proving rounds, it feeds, extracts and ejects perfectly.

For those unfamiliar with action proving rounds, they are exact copies (non-firing rounds) of loaded rounds machined from aluminum. Also the primer pocket is

machined out and a plastic insert is pressed into place, so they can also be used as snap caps.

In front are the 7.62x39 action proving rounds (red ones), in the background are 5.56 and 7.62x51 proving rounds and a set of 7.62x51 go and no-go gauges (silver ones).



## **Metal Finish and Final Assembly *(editor's notes)***

*Alumahyde II in Dark Park Gray was used on the metal for this build, however your aren't limited to Alumahyde only. People use many things ranging from heat/scratch resistant spray paint, bake-on lacquer/moly teflon, various blueing and other methods. If you aren't sure, practice on some scrap pieces of metal to compare the finishes you like best.*



*Silver Dollar ended up riveting the parts for that traditional effect, however many builders use screws as well and when done right are just as effective.*





*Should you ever have any questions on anything in this tutorial or other technical questions, please don't hesitate to [contact](#) us. We're in the process of making a variety of other tutorials including one with our Weld Packs, so please visit often. Last but not least, please keep it safe and legal, **measure twice and cut once** and have fun!*